

Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Motivator

Cargo and Throughput Evaluation are key aspects of movement control, which is the planning, routing, scheduling, and controlling of personnel and cargo movement over lines of communications (LOCs).

Movement control also entails the in-transit visibility (ITV) of cargo to assist commanders and operations staffs in force tracking.

In addition, movement control includes reception and onward movement/throughput of personnel, equipment, and supplies in accordance with command directives and responsibilities.

Movement control is a system involving the coordination and integration of movement information and programs spanning all levels of operations.

As a Senior Transportation or Logistics Officer, your job will be to make sure that the personnel, cargo, and equipment gets to the end user in time to secure mission success.







Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Principles of Movement Control

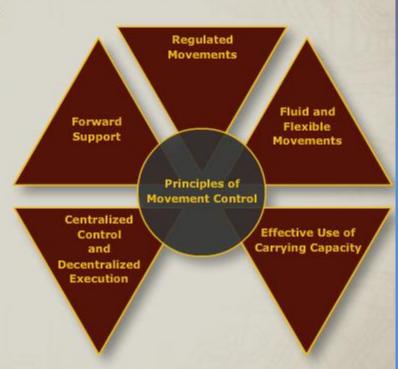
Effective resource management requires the establishment and maintenance of a flow of resources and cargo through the transportation system that permits efficient utilization of all transportation resources and capabilities.

Maximum throughput at all transportation route segments, ports, and nodes, along with timely deliveries, are key measures of success in this effort.

For the mode, terminal, and facility operator functions, resource management pertains to the efficient employment of personnel, materiel, equipment, and facilities to facilitate cargo throughput.

There are five movement control principles that form the foundation for management of all transportation operations.

Knowing how to evaluate cargo throughput is key to your success as a transportation or logistics officer.







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Certain functions must be performed to execute Movement Control.

The role different organizations play in performing these Movement Control functions will impact your communications:

- Planning
- Allocating
- Routing
- Coordinating
- In-transit Visibility

Different organizations will have a different level of involvement in these Movement Control functions: planning, allocating, routing, coordinating, and intransit visibility.

Lt. Col Robert W. Petrillo and Major Daniel W. Carpenter June 2002

On 7 June 2002, an 11-soldier advance party from the 330th Transportation Battalion (Movement Control) arrived at Karshi-Khanabad Air Base in Uzbekistan...

Our mission was to establish a movement control center (MCC) for Combined/Joint Task Force 180 (CJTF 180)

operating in Afghanistan.

Although CJTF 180 was built around the XVIIIth Airborne Corps, this operation definitely would not be a doctrinal corps movement control battalion (MCB) mission.



...the MCC and its subordinate movement control teams would operate in an AOR that was almost completely nonlinear and in which air operations, rather than line-haul operations, would dominate.



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Automated Mobility Systems

The Total Asset Visibility capability utilizes an array of Automated Mobility System elements that contributes to the whole picture.

Some components of the Automated Mobility System include:

- Automated Air Loading Planning System (AALPS)
- Automated Movement Flow Tracking System (AMFT)
- Automated Manifest System (AMS)
- Battle Command Sustainment Support System (BCS3)
- Computerized Movements Planning and Status System (COMPASS)
- Global Air Transportation Execution System (GATES)
- Global Combat Support System-Army (GCSS-Army) and associated databases
- Global Command and Control System (GCCS)
- Global Transportation Network (GTN)
- Intelligent Road and Rail Information System (IRRIS)
- Joint Force Requirements Generator II (JFRG II)
- Joint Operation Planning and Execution System (JOPES)
- Mobilization Movement Control System (MOBCON)
- Radio Frequency Identification (RFID)
- Transportation Coordinators' Automated Information for Movement System II (TC-AIMS II)
- Worldwide Port System (WPS)

Remember, Total Asset Visibility is a capability, not a system.

However it does rely upon a system of automated databases or mobility systems.



It is the capability to provide users with current information on the location and status of units, personnel, supplies, and equipment that makes Total Asset Visibility possible.

It facilitates the capability to act upon that information to improve overall performance of the Department of Defense's (DoD's) logistics practices.



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The Transportation Control and Movement Document (TCMD, DD Form 1384) is used to:

- Control the movement of cargo while in the Defense Transportation System (DTS) and performs functions similar to bill of lading in the commercial transportation system
- Process, freight, 463L pallets, and containers
- Provide to the clearance authorities, ports, receivers, and other interested transportation personnel with advance notice of shipments and the information necessary to process the shipments through the DTS
- Prepare air and surface manifests and for compiling logistics management reports

The Transportation Control and Movement Document (TCMD, DD Form 1384) is used to: process and move freight (bills of lading), 463L pallets, containers, provide advance notice of cargo shipments, prepare air and surface manifests, and for compiling logistics management reports.

Movement Control Forms

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Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

The TCMD has three primary formats the:

- Transaction data set
- · Electrically transmitted message
- · Manual or hard copy form

NOTE:

While all of the formats contain the same basic information concerning a shipment, use the automated record whenever both the preparing and receiving activities are able to prepare, transmit, and receive automated records. For training purposes, the manual or hard copy format is used here.

The TCMD has three primary formats the: transaction data set, electrically transmitted message, and the manual or hard copy form.

For training purposes, the manual or hard copy form is used here.

Movement Control Forms (cont.)

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Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

TCMD

DD Form 1384 TCMD is a multipurpose form used when transporting any item within the DoD transportation network. Under most circumstances, the TCMD or its electronic equivalent is available.

In this lesson, it will be explained how a DD Form 1384 is filled out. This information is important even if you do not plan to fill out a TCMD.But, by understanding how to prepare it, you will know what information goes into each block.

The following three screens will take you block by block through the form. You will move the cursor over the TCMD. Each block will highlight. You may select the block to learn more.

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TCMD (cont.)

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Document ID



The document identifier code (DIC) is a threecharacter code which indicates the purpose for which the form is being used (advance TCMD, air manifest, or water manifest documents) or the type of shipment to which it relates.

The DIC also specifies the format for additional transportation that is required. For more information on the DIC, see the Military Standard Transportation and Movement Procedures (MILSTAMP) Transportation Account Codes (TAC).

Trailer or Container Number

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When a shipment is moving in a controlled ISO container, the last five digits of the container number will be entered in this block.

- (a) The coded or in-the-clear address of the shipping installation, unit, or other agency appears in this block.
- (b) This address code should be the same as the one appearing in the FROM block of the military shipment label on the shipping container.

Commodity Special Handling

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- (a) The information appearing in this block provides a quick means of identifying material for manifesting, customs requirements, stevedore billing, and transportation cost.
- (b) This information also provides an indication of whether the shipment requires special attention during shipment, handling, or storage.
- (c) The Water Commodity and Special Handling Code is a five or six-position alpha, alphanumeric, numeric code, or abbreviation used to identify a specific piece of cargo. It tells cargo handlers that there is a special way to handle this particular shipment.

The five-character code is developed in the following manner:

- First three positions identify the commodity category.
- · Fourth position shows type of cargo.
- Fifth position notes exception/handling procedures.

Air Dimension Code

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The air dimension code is used only for shipments moving by aircraft. It identifies the type of cargo aircraft capable of transporting the largest container in the shipment. This code is found in Appendix B of MILSTAMP.

Port of Embarkation

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- (a) A POE is an air or ocean terminal at which troops, equipment, or material are loaded aboard aircraft or vessels. Every terminal throughout the world that is used in the transportation of DoD shipments is assigned an identification code.
- (b) Ocean terminal codes indicate the major geographical area, the sub-area, and the specific port, port area, or island. The list of water port designators is found in Appendix B of MILSTAMP.

Page No. Page No.	The same code system as that used for POEs is used to identify the air or ocean terminal where the shipment is designated to be unloaded.
Mode Transportation Control and Movement Document Page No 1. Dec 1D 2. Trir Ch 3. Consigner 4. Commodity Special Handling 5. Air Dim 6. POE 7. POG 8. Made 9. Pack 10. Transportation Control No 11. Consigner 12. PRI 13. RGO 14. Pmj 15. Date 10. ETA 17. TR Act	Advance information as to the mode of transportation by which the shipment is arriving will be entered in this block. This information will enable terminal personnel to prepare for arrival of the particular conveyance.
Pack	Pack refers to the method of packaging a shipment unit or units together.
Transportation Control Number Transportation Control and Movement Document 1. Dec 10 2. Trit Ct 2. Consigner 4. Commodity Special Harding 2. Air Stin 6. POC 7. POC	The Department of Defense activity address code is a six-position alphanumeric code which identifies the initiator or requisitioner of supplies.
Consignee	The consignee is the unit that will receive the cargo.
Transportation Control and Movement Document Page No	The activity address code entered in this block should be the same as that entered in the TO block of the address marking, or the ultimate consignee block if the shipment is going overseas.
Priority	The priority code entered in this block should be the same as the priority code appearing on the address marking.
Required Delivery Date Transportation Control and Movement Document Page No.	The Required Delivery Date (RDD) is the Julian calendar date by which the shipment must be delivered to the consignee.
Project	s block is left blank unless the shipment unit

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is moving in support of a project which has been assigned a specific identification code. Again, the shipping transportation officer will extract this information from the supply release documents when the TCMD is prepared.

Date

The current day's date.

Estimated Time of Arrival

Transportation Control and Movement Document

The ETA is actually the estimate of the number of days the shipment will be in transit to the POE.

Transportation Account

				Tree	nsportati	on i	Con trail	and Mo	27 BI	m em t	: Ооси	ment				Pag	ge Ho	
1. Dec ID	2. Tri	ir Cti	3. Can	signor	4. Camma	city	Special	Hendling		S. Alt	Olm	6. POE				7. 1	P00	
II. Mode	9. Pa	ıck	10. To	reportation C	antral No	11.	. Consign	**	12.	PRI	13. RC	0 14	Pro	15.	Dete	1	G. ETA	17. TR Acct
15. Cerrie	•		19. FI	ght - Truck - W	lay Dac No		20. Ref	21. Ren	urk	ia.				22. Ph	OBI	23.	Weight	24. Cube
a. Trans P	aint	b. Di	ibs Rec	c. Day Whee	d. Debs Sh	φđ	e. Made	Cerrier	ß. E	(light)	Truck (g. Ref	h. 9	aw Le	c 1. 5	ijllt	j. Cor	d k. Sign
25.						П									Г			
26.															Γ			
77	$\overline{}$					\neg			$\overline{}$						$\overline{}$		$\overline{}$	

Military services and other DoD agencies that use the DTS are required to pay for the transportation and terminal services involved in the movement of shipments within the system.

Four-character transportation account codes are assigned to these agencies to facilitate shipper identification for cost accounting and billing purposes.

Carrier

Transportation Control and Movement Document

Page N

The name of the trucking company, airline, railroad, or ship that moves the cargo is entered in this block.

Flight - Truck - Voyage - Document Number

			Tri	insporteti	on	Control	and Mo	WHI	ment	Doc	ume	nt			Р	aga Ko		
1. Dec ID	2. Trir Ct	3. Can	signor	4. Cammo	ditty	Special h	tendling		S. Air	Otm	6.1	POE			7	. POD		
II. Mode	9. Peck	10. To	enapartetion	Control No	11	. Consign	**	12.	PRI	13. R	00	14. Pr	roj .	15. 0	utu	16. ET#	17.	TIR Alact
15. Cerris		19. M	ght - Truck -	Vay Dac No		20. Ref	21. Ren	erk	*				22.	Plece	a 2	3. Weig	nt 24	l. Cube
s. Trans F 25. 26.	Naint b. D	ebs Rec	c. Day Whee	d. Debs S	op d	e. Made	Cerrier	f. 7	Night/	Truck	g.	Ref h.	Sbay	v Lec	I. Sp	It J. C	and I	k. Sign
27. 28. Const			29. Debe Rei		ne di	30. Cond	lition	31.										
DOC TRAIL	consign corest A		an. remodity apacial oliv andling also a.		SE COM	Type TITE	ensportat stroi scum	ion ber	oss- algres	0	HIGO B.	PTOS I	alton digod	ETA d.		nn, add Places B.		cubs E.

The license number of the truck or trailer in which the cargo is loaded is given in this block. If the shipment is to be made by air or vessel, the mission or voyage number is entered.

These numbers may be obtained from the Military Sealift Command representative or Military Airlift Command representative.

The MILSTAMP provides that entry of this information is optional. However, local policy may dictate that the name of the carrier and vehicle number be placed in these blocks.

Reference

Transportation Control and Movement Document

Cor 1012 Tel: Col 3 Consister | 14 Commodity Special Handler | 15 Air Din | 16 DCC

The use of this block is optional.It should not include remarks that would apply to the shipment beyond the APOE/POE.

Remarks

				Tra	nsportati	an	Control	and Mo	WHI	n en t	Docu	ment				F	laga	Ho		
1. Dec ID	2. Tr	ir Cti	3. Can	signor	4. Camma	dit	Special										7. PO			
G. Made	9. Pa	ick	10. Tn	inepartation C	antral No	11	. Consign	100	12.	PRI	13. RC	0 14	. Pn	20	LS. O	ute	16.	ETA	17.	TR Acct
15. Cerries			19. Mi	ght - Truck - V	lay Dac No		20. Ref	21. Ren	erk	-				22.	Piec	•	23. W	Aright	24	4. Cube
a. Trans P	aint	b. Di	ths Rec	C Day Whee	d. Debs 5h	ıpd	e. Ficds	Cerrier	ř. F	light/	Truck	g. Ref	h.:	Staw	Loc	l. 5p	lt	j. Cor	sd I	k. Sign
25.																				
20.																				
27.																				

This block is used only when a shipper is providing information which is not applicable to the entire move.

For example, if a shipper is advised by the originating carrier that the shipment will be transferred to another truck before its delivery to the POE, the shipper notes this fact in the remarks block.

Pieces

				Tre	nxporteti	on Cor	itral	and Mo	9V N	memi	: Docu	ment				- 6	ag	r Ho		
1. Dec ID	Z. Tri	ir Cti	3. Can	signor	4. Camma	dity Sp	ecial	Hendling		5. Al	Olm	6. POE				3	7. P	00		
E. Mode	9. Pa	ıck	10. Tn	napartation C	antral No	11. Ca	naigr	100	12	PRI	13. RI	0 14	. Pro	۹	15.0	ute	14	. ETA	17.	TR Ac
15. Cerrle	•		19. M	ght - Truck - V	ay Dac No	20.	Ref	21. Ren	ark	•			Т	22.	Piec	- 1	23. 1	Weight	24	l. Cube
a. Trans P	aint	b. Di	the Rec	C Day Whee	d. Dabi Sh	pd a.l	Made	Carrier	6.1	llight,	/Truck	g. Ref	h. 5	bav	/ Loc	l. 5g	ıllt	j, Cor	nd I	k. Silgn
25.	\neg					$\neg \neg$			Г										Т	
									Н				Н							
									Н				\vdash		-					

The function of checking cargo basically involves the counting and inspection of each container or item of cargo as it is transferred from one location to another.

In order to determine whether there are any overages or shortages, the cargo checker must refer to the number of pieces shown in this block.

Weight

				nsportatio	n Control	and Move	ement Do	ument		Page No	
1. Dec ID	2. Trir Cti	3. Can	signor	4. Commod	ity Special I	Hendling	S. Air Dim	6. POE		7. POD	
II. Made 1	9. Pack	10. Tr	enepartation C	antral No	11. Consign	** 1	2. PRI 13. I	100 14. P	roj 15. Dete	16. ETA 1	17. TR Acct
15. Cerrier		19. M	ght - Truck - V	ay Dac No	20. Raf	21. Ramar	lan		22. Pleces	23. Weight	24. Cube
is. Trans Po	int b. D	ebs Rec	c. Day Whee	d. Debs Shj	pd e. Made	Cerrier f.	Flight/Truc	k g. Ref h.	. Stow Lec 1. 5	iplit j. Con	d k. Sign
25.											
26.											+
27.											

The weight is for the entire shipment unit, unless the shipment unit is moving by more than one vehicle.

When a shipment unit is moving in more than one vehicle, only the number of pieces, weight, and cube loaded on the transporting vehicle will be shown.

Cube

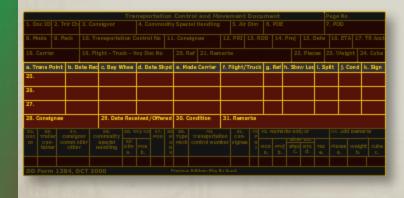
Fransportation Control and Movement Document

Paga Ho

The cube is for the entire shipment unit, unless the shipment unit is moving by more than one vehicle.

a. Tr	rans Point	b. Date Rec	c. Bay Whse	d. Date Shpd	e. Mode Carrier	f. Flight/Truck	g. Ref	h. Stow Loc	i. Split	j. Cond	k. Sign
25.											
26.											
27.											
28. 0	Consignee		29. Date Rece	ived/Offered	30. Condition	31. Remarks					

Blocks 25 Through 27



This portion of the form is completed by a cargo checker each time the shipment is transferred from one carrier to another, from a carrier to a temporary storage location, or from a temporary storage location to a carrier.

The form is designed to accommodate three separate transshipments. The information that the cargo checkers enter in block "a" through "k" is used to prepare manifests, vessel stowage plans, and a number of other documents.

Therefore, the cargo checker must thoroughly understand how to record the correct information in the appropriate block. Detailed instructions for completing this portion of the form are provided in the next section.

32. Doc	33.	34. Consignor	35.	36. V	oy No	37. POD	38. M	39. Type	40. Transportation Control Number	41. Corp.	42.	43. R	emarl	ks and	/or	44. Add	d Remark	s
ID	Con- tainer	Comm Abbr Other	Special	Air Dim a.	POE b.	700	O D E	Pack	Control Number	signee	Ŕ	RDD a.	Proj b.	Shpd c.	ETA d.	Pieces a.	Weight b.	Cube c.
DD	Form :	1384, OCT	2000				Pr	evious	Editions May Be Us	ed.								

Blocks 32 Through 44



This portion of the form is used to provide supplemental information for special categories of shipments.

When used for this purpose, the information is referred to as "trailer data" or "header data," depending upon the type of shipment it describes. Trailer data provide additional information for a single shipment unit.



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Automated ATCMD

The Automated Transportation Control and Movement Document (ATCMD) is an electronic TCMD that that is used to:

- Provide a means for processing a shipment through the air or water clearance authority providing the preferred shipping
 method which offers the lowest overall cost to the Government and meets sponsoring shipper Service requirements to
 include port handling costs.
- Determine whether cargo will be shipped in ISO containers, Twenty Foot Equivalent Unit (TEU)/ Forty Foot Equivalent
 Unit (FEU) or by Breakbulk (BB) or Seashed for large military vehicles and outsized BB.
- Provide notification to the Port of Embarkation (POE) of impending inbound cargo for further transfer.
- · Facilitate cargo manifesting operations at the POE.

						Trai	ıspo	rtati	on (Cont	rol a	nd Mo	vei	nent	Doc	ume	nt				Page N	No		
1. Do	oc ID	2. Tr	ir Ctr	3. Con	signor		4. Co	mmo	dity	Spec	ial H	andling		5. Air	Dim	6.	POE				7. POC	,		
8. M	ode	9. Pa	ick	10. Tra	nsportat	ion C	ontro	l No	11.	Cons	igne	е	12.	PRI 1	13. R	DD	14.	Proj	15. 1	Date	16. E	TA 1	.7. TI	R Acct
18. 0	Carrie			19. Fli	ght - Truc	ck - V	oy Do	c No		20. R	ef 2	1. Rem	arks	S				2.2	. Piec	es	23. W	eight	24.	Cube
a. Tr	ans P	oint	b. Da	te Rec	c. Bay W	hse	d. Da	ite Sh	npd	e. Mo	de C	arrier	f. F	light/1	ruci	(g. I	Ref l	ı. Sto	w Loc	i. s	plit j.	. Cond	l k.	Sign
25.																							Τ	
26.																Τ	T				\neg		Τ	
27.																Τ	寸				\neg		Τ	
28. 0	Consig	nee			29. Date	Rece	ived/	Offer	ed	30. C	ondi	tion	31.	Rema	rks	_	_			_			_	
32. Doc	33. Traile		34. onsigno		35. mmodity	36. V	oy No	37.	38.	39.	Torre	40. Isportati		41. Con- signee	42.	43. R	emar	ks and	i/or		44. A	dd Re	mark	S
ID	Con- taine	Co	mm Ab Other	br S	Special andling	Air Dim a.	POE b.	750	O D E	39. Type Pack	Cont	rol Numi	on	signee	Ŕ	RDD a.	Proj b.	_	ETA d.	Tac e.	Piece a.	s We	ight),	Cube c.
DD	Form	138	34, 00	CT 200	00				P	revious	Editio	ons May B	e Us	ed.										

The Automated Transportation Control and Movement Document (ATCMD) is an electronic TCMD that contains the same information that a hard copy TCMD will contain.

The ATCMD is used to notify the Port of Embarkation that a shipment is coming and any special information about that shipment.



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

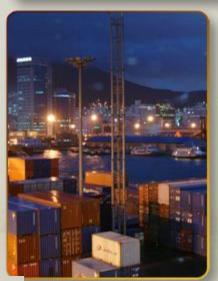
Cargo Accountability and Flow Process

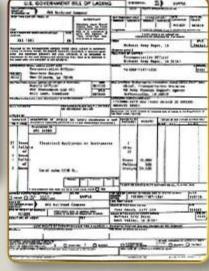
The process of moving cargo from the shipper to the user requires a multistep process, which when coupled with in-transit visibility (ITV) provides accountably of the cargo as well as tracking it from the shipper to its destination.

The Cargo Accountability and Documentation Flow involve the following:

- Port receives copy of all source documents from the shipper
- Cargo is received
- · Bill of Lading is accomplished
- Cargo staged
- Pre-stowage Plan developed
- · Cargo Traffic Messages sent
- Ocean Cargo Manifest created
- Cargo Outurn and Reconciliation Message created
- Cargo Outurn and Reconciliation Message-Reply created







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Sets	Sign	efure or	Leaging	Aprel		Date	Sign	sture of	Unique	11g A	_		Septe	ture of	Baselel		4

The process of moving cargo from the shipper to the user requires a multistep process, which when coupled with in-transit visibility (ITV) provides accountably of the cargo as well as tracking it from the shipper to its destination.

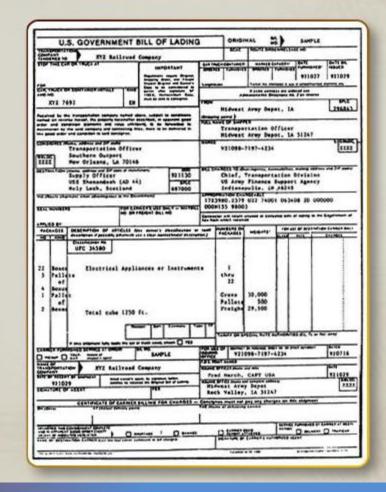


Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

The port receives a copy of all source documents from the shipper and reviews them for completeness and special commodity information, i.e., Class A, B, and C explosives data.

The port will also check chill and freeze data for subsistence items. Once this information has been gathered, the port official gives it to the gate personnel.

Source Documents





Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Cargo is received and sent to either a staging area or the transit shed.

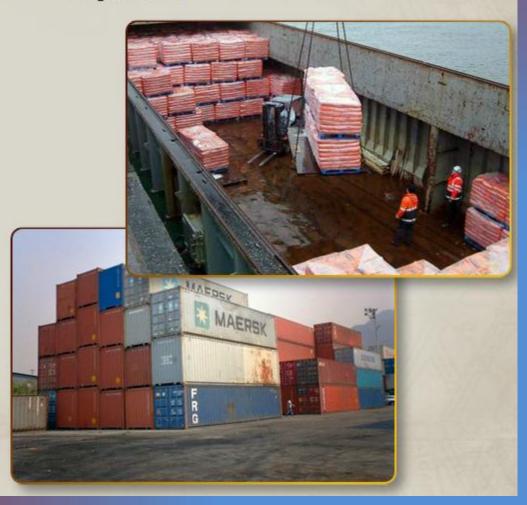
The only cargo that processes through the transit shed is breakbulk cargo.

When the cargo arrives at the transit shed, it is completely downloaded.

After the downloading process, cargo is tallied and inspected, (reconciling lost, damaged, or frustrated cargo).

If necessary, tracing, holding and diverting actions will take place.

Cargo Received

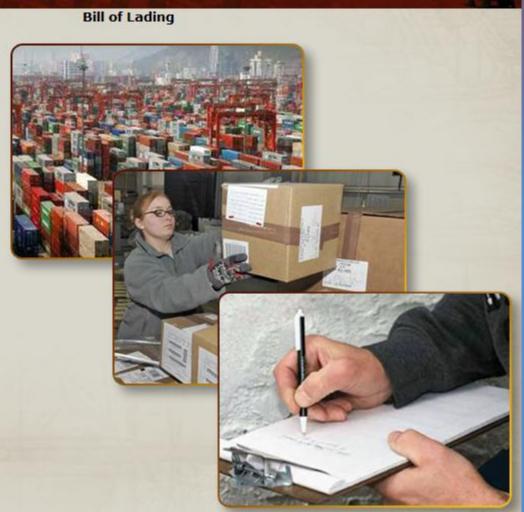




Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

After the downloading process is completed, transportation documents are signed by a port official, relieving the carrier of responsibility.

This process is known as "accomplishing the bill of lading."





Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Staging is the final storage location in the terminal.

The specific storage locations are forwarded to the terminal office for input into the terminal staging plan.

Because resources of manpower, equipment, and space are always limited, there are competing requirements for these resources.

The staging plan is a key management tool in eliminating delay and confusion.

Cargo Staged





Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

The pre-stowage plan shows the intended location where cargo is to be stowed on the ship.

It minimizes on-berth time by functioning as a source document for planning the call forward of cargo to shipside (Call Forward Plan).

It also provides the location of cargo on the pier (Pier Plan) before the cargo is loaded aboard the ship.





Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Cargo Traffic Messages

The Cargo Traffic Message is sent from the POE to the POD; it informs the POD that a vessel is enroute to their location.

The POD uses this message to establish the vessel's file.

A Cargo Traffic Message (CTM) also gives a brief description of the cargo loaded on board the vessel.

It also informs the POD of any special equipment or personnel needed to discharge the ship.

	Joint Me	ssage	e Form				Security Class	ification		
Page	Released Time	ACT	IRAQ	LME	Class	CIC	For message center/	Date/Time	Month	Year
of							communication center data			
				Messag	je Hand	ling :	Instructions			
Subi	ect: Milstamp Cargo 1	raffic	Messag				From: 1GC Bayonne, N.J.			
	S Yankee SkipperA46:						To: KJ1 Cadiz Spain			
	eparted 1GC 311121Z						KF3 Leghorn Italy			
	A 10 FEB Subsequent						KF1 Naples Italy			
	on Self-sustained Mar otal Cargo Loaded 790				ately		CMDR Eamtmc Subject: Milstamp Cargo Tra	ffic		
	or KJ1 1734 LT	,,	124201				Subject. Phistallip Cargo Tra	····c		
6. KI	F3 1825 LT									
Distb.										
Signat	ture					Se	curity Classification	Date/Time G	roup	



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Ocean Cargo Manifest and Recapitulation

The Ocean Cargo Manifest and Recapitulation is the header document for the Ocean Cargo Manifest Package.

The Recap lists only heavy lift/outsized dimension cargo and provides the POD with instructions for disposal of government owned dunnage and lashing gear.

This document is sent by the POE.

	Recapitulat	ion	s	ummary	Oc Recap				nifes Sumn		Re	evised			Orig	inal	
ı	Vessel Name		Status	VOY Doc No	Date	Loa	ded	Port	Heav	y Lift	Outsize D	imenior	ıs	Page No	No	of Pag	es
ı	SS Yankee Skip	per 8	81		8031	1G(С		4		4			1	1		
ı		ı	Descri	iption and	Locatio	on o	f He	avy	Lifts	and (Other Spe	cial Da	ıta				
ı	A Destination Point	Descr	iption	Length/Wid	th/Heigh		Self Sus		VES	cgo	Stow Loc	L/T	De: Por	stination rt	svc	L/T	M/T
ı	B Destination Point	Comm Categ		For Mistake			X	\times	\times	X	Trans Acct Code	On Deck		of Units V's/Mail		\times	\times
	KJ1 KF3 KF3 KF3	Crane SPCNO SPCNO SPCNO	os os	00420 120 00084 072 00084 072 00084 072	060 060		X X X	х			20DP 3LHF 3LHF 3LHF	16 06 06 06	KJ: KF: KF: KF:	3	A F A N	1410 0324 1825 4346	2100 0629 3130 6569
	I hereby certify that t good order and condit		s listed h	ereon have been j	placed aboar	rd in a	pparen	t			wledge having re ition for delivery						
ı	Signature James Ande	rson	Grade CC	e or Rank)L	Title Chi	ef				er of \ ohn Do	/essel (Sign e	ature)					
	Name and Maili HQ EATMC, I				Activity												



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Ocean Cargo Manifest

The Ocean Cargo Manifest is the second document in the manifest package.

It is a detailed legal listing of all cargo loaded on the vessel to include all heavy lift/outsized dimension cargo.

This document is also sent by the POE.

							(Carg	о М	lanif	est									
	Ai	rcraft Dat	ta	Dest	Code	П	Dest	N	0	Su	Date	AL	w w	/т /	ALW C	U ST	A FY	TY	No	Pg No
	Carrier					Ш														
	POE 1GC	Date 8031	Voyage A4611	Doc N	o POE KF3			Name kee S		per	Status 81	S 3	ust	Vo	ucher	No	Remai	rks		Pg No 6
Doc ID	Vehicle Trailer or	Vo Make CMDTY Number		Cargo ESC	Voy Doc	Por Dis		Type Pack			Control er		P R I	RDD	Proj		TRNS ACCT	Piece	WT	Cube
	CNTNR No	CMDTY Number			TRNS PT				L											
TXL TXR	44223 44223	Bootle	702	Z9	4611	KF3		X5 X5			3023X001 3023X001		3				A205	0001	0695	0 0365
TXM TXM	44223 44223				4611 4611	KF3 KF3	3	BX BX			73450001 73450001		3	050 050			A205 A205			0 0110 0 0100
TXM	44223	Trpqup	741	Z(4611	KF3	3	вх			73450001		3	050	060	3LHA	A205	0029	0145	0 0155
Items	have bee	n loaded						e beei evers			ed exce	pt a	s ci	rcled	, т	otals		0129	0695	0
Date	Sign	ature or I	Loading <i>i</i>	Agent		Date		Signa	tur	e of l	Jnloadii	ng #	\gei	nt	S	ignat	ure of I	Receiv	ing Ag	ent



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Cargo Outurn and Reconciliation Message

The Cargo Outurn and Reconciliation Message (CORM) is sent from the POD to the POE within 14 days of vessel discharge.

This document lists all shortages and overages of cargo that was discharged.

	Joint Mes	ssage	Form				Security Clas	sification		
Page	Released Time	ACT	IRAQ	LME	Class	CIC	For message center/	Date/Time	Month	Year
of							communication center data			
				Messag	e Handl	ing :	Instructions			
1. Pa 2. PC 3. SS 4. Ma 5. Di 6. 10 7. Pa	ect: Cargo Outrun Ad art I - Advisory DD - JF1 Bremerhaver I Idaho State A1358 anifest Received sarm/Rearm/PCUS GC OSOD art II Reconciliation GC Shortages			onciliatio	on Data		From: JF1 Bremerhaven, To: 1GC Mot Bayonne, Comsclant Comscelm MTMCEA Info: JG1 Rotterdam, Ne Subject: Cargo Outrun Advi	N.J. therlands	nciliation	Data
Item 1	TCN AK412350370	0010V	vv	Comm 509Z9		Pa PT				
i	AK35675031:			512Z9		PT	00 04			
Distb.										
Signat	ure					Se	curity Classification	Date/Time G	roup	



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Cargo Outurn and Reconciliation Message - Reply

The Cargo Outurn and Reconciliation Message-Reply (CORM-R) is sent from the POE to the POD within 10 days of receiving the CORM.

It gives the POE instructions for disposition of shortages and overages that were mentioned in the CORM.

	Joint Me	ssage	e Form				Security Class	ification		
Page	Released Time	ACT	IRAQ	LME	Class	CIC	For message center/	Date/Time	Month	Year
of							communication center data			
				Messag	je Hand	ing :	Instructions			
1. 10 2. 55	iect: CORM Reply GC Bayonne JF1 Bren 5 Idaho State A4888 GC Shortages	nerhav	e				From: 1GC Bayonne, N.J. To: JF1 Bremerhaven, Gomsclant Comscelm MTMCEA Info: JG1 Rotterdam, Neth			
Item	n TO	CN				ositio				
1	Al	(4123	5037001	0XXX	2 Pa	llets !	Shipped on Voyage A4900			
1		K3567	5031123	4XAX	Load	4 Pa	llets Aboard Voyage A4900 for	r JG1		
Distb.										
Signat	ture					Se	curity Classification	Date/Time G	roup	



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Key Points

The following key points were discussed:

- Movement Control Functions
- · Movement Control Forms
- · Transportation Control and Movement Document (TCMD)
- Automated TCMD
- Cargo Accountability and Flow Process





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POD SS I Man Disa 1GC Part	- JF1 Bremerhar daho State A135 ifest Received rm/Rearm/PCU: OSOD II Reconcillation Shortages TCN	s s	Com 5092	







Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Quick Challenge



Which of the following is the Transportation Control and Movement Document (TCMD, DD Form 1384) used for?

Select all that apply and then select Submit.

- A. Create a detailed legal listing of all cargo loaded on the vessel
- ~
- B. Control the movement of cargo while in the Defense Transportation System (DTS) and performs functions similar to bill of lading in the commercial transportation system
- C. Prepare a pre-stowage plan for ship loading
- 1
- D. Prepare air and surface manifests and for compiling logistics management reports



Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Quick Challenge



Which message is sent from the POE to the POD within 10 days of receiving the CORM?

Select best answer, and then select Submit.

- A. Bill of lading
- B. Cargo Traffic Message



- C. Cargo Outurn and Reconciliation Message-Reply
- D. Ocean Cargo Manifest and Recapitulation





Senior Transportation Officer Qualification Course Cargo Throughput Evaluation

Throughput Evaluation

When evaluating a port or JLOTS operation, the amount of cargo throughput must be determined by evaluating the phase that the port or JLOTS site is currently in.

There are three phases of Throughput Evaluation:

- The Initial Phase involves:
 - · Introduction of unit equipment.
 - Capability to discharge Roll-on/Roll-off (RO/RO) and barge carrying vessels.
 - Condition of the terminal (Disorganized, early development stage unable to fully handle large numbers of ships).
- . The Tactical Supply Phase depends on whether:
 - · Terminal facilities have been improved.
 - Neither terminal nor land net can handle large volumes of containers.
 - Unit moves drops off significantly.
- . The Sustained Resupply Phase reflects whether the:
 - Terminal is well organized.
 - Theater and terminal handles large volumes of containers.
 - Availability of fixed port facilities and types of vessels affect port capacity.









Initial Phase

The initial phase introduces unit equipment. It depends greatly on the capability of discharging RO/RO vessels and barge-carrying vessels (LASH/SEABEE).

In this phase, the military terminal organization is in the early development stages. It cannot fully handle large numbers of ships and large volumes of cargo.

Ocean freight consists mostly of unit moves that require unit integrity of personnel, supplies, and equipment.

RO/RO vessels and barge-carrying ships are desirable because of the high volume of vehicles being transported and the need to expedite vessel discharge and port clearance.

Tactical Supply Phase

The tactical resupply phase addresses the time when terminal facilities are being operated and improved. Neither they nor the land transportation net can handle large volumes of containers discharged from non-self-sustaining containerships.

Conventional break-bulk vessels and self-sustaining containerships off-load at fixed ports and through JLOTS environments. The level of unit moves has dropped greatly. Accordingly, the percentage of vehicles in freight is reduced.

Sustained Resupply Phase

The sustained resupply phase occurs when the receiving ports and the theater transportation net can receive large volumes of containers discharged from large, non-self-sustaining containerships.

The terminal organization is well developed. However, the availability of fixed facilities and the quantity and types of vessels affect port capacity.

Maximum capacity is afforded by matching vessels to appropriate terminals.



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Throughput Evaluation Planning Elements

When planning throughput evaluation, take into consideration the following elements:

- Determining the type or category of existing terminals (container, RO/RO, break-bulk, special commodity (ammunition), bulk fuel, or a composite capability for multipurpose or combi-terminals).
- Estimating the existing terminal throughput capacity to include:
 - o Estimated total tonnage.
 - Number of personnel and containers that can be received, processed, and cleared through the terminal in a day (a day is two 10-hour shifts plus two 2-hour maintenance periods).
- Computing the terminal workload needed to support the operation expressed as the number of personnel, vehicles, and containers that must be received, processed, and cleared through the terminal.
- Determining the repair and rehabilitation of existing facilities and/or new construction needed to increase existing terminal throughput capacity to equal the determined terminal workload.
- Estimating the Material Handling Equipment (MHE) needed to process the required workload, equipment such as tugs, barges, and floating cranes; and the personnel to man them.
- Estimating the units, individuals, and supervisory and command elements needed to operate the terminal.











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Throughput is the average movement of containers, wheeled vehicles, tracked vehicles, breakbulk cargo, and bulk liquid cargo that can pass through a port or beach daily.

It covers movement from arrival at the port or instream, to off-loading cargo onto lighters or piers, to the exit or clearance from bare beach or port complex.

Throughput is usually expressed in measurement tons (MTs) or square feet. Reception and storage may affect final throughput.

The JLOTS commander's goal, when planning for throughput, is to keep cargo continuously moving from the ships through the Marshalling yards to port complex exit.

Continuous movement of cargo is a key factor for efficient and effective throughput operations.

The major aspects of Throughput are:

- Throughput Planning Factors
- Throughput Rate
- Throughput Capacity

Throughput Planning for JLOTS







Throughput Planning Factors

Throughput planning factors have been established for the lighterage systems used in JLOTS based on exercise demonstrations and are representative of achievable integrated off-load.

Throughput is based on times necessary to execute the events of a JLOTS operation. Such events may include the following:

- · Cast off and clear time from the beach
- Transit time to the ship
- Approach and moor time at the ship
- · Number of discharge points
- Load time at the ship
- · Cast off and clear time from the ship
- Transit time to the beach
- Approach and moor time at the beach
- · Off-load time at the beach
- Clearance time for JLOTS operations area

Throughput Capacity

Throughput Capacity is determined by the following factors:

- The number of suitable anchorages and maneuvering spaces available for off-load systems in the off-load area.
- Beach capacity is an estimate of cargo that may be unloaded over a designated strip of shore per day and depends on the number of ships that can be discharged at one time.
- Beach throughput depends on both the off-load and clearance rates. The off-load capacity rate is the rate cargo is discharged from lighterage.
 Beach throughput is a major consideration of JLOTS operations.
- Clearance capacity is an estimate of the cargo that may be transported inland from a beach or port over the available means of inland communication, including roads, railways, inland waterways, pipelines, and airheads. Clearance capacity includes the short tons of cargo and the number of containers and troops that can be moved daily from the beach or port complex to initial inland locations.

Throughput Rate

A factor that determines the throughput rates is the capability of the lighterage; i.e., cargo type carried or weight capacity.

Throughput rate is the quantitative measure of average daily movement of containers, wheeled vehicles, tracked vehicles, bulk liquid cargo, and breakbulk cargo that is moved from cargo ships, containerships, RO/RO vessels, and reverse osmosis water purification units (ROWPU) and tankers to marshalling yards or storage areas ashore.

There are five distinct and continuous events that occur during throughput operations that impact the throughput rate:

- Ship cargo transfer
- Cargo movement from ship-to-shore (lighter transit time)
- Beach cargo transfer
- Cargo movement (transit time) to marshalling vards
- Cargo clearance from port complex

Training and effective command, control, communications, and computers (C4) in these five events are key factors to sustaining throughput rates



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Throughput capacity is based on a port's ability to receive, process, and clear personnel and equipment.

The cargo reception function is based on the number and size of the berths, material handling equipment (MHE), and water depth.

The cargo process function is based on staging area and the time it takes to marry units with their respective equipment.

The cargo clearing function is based on truck and rail out loading facilities, gate capacity, and links to the theater transportation networks.

The throughput capacity of a terminal is dependent on its storage and clearance capacity.

Terminal efficiency is measured in throughput capacity - the daily amount of cargo and personnel that can be received, processed, and moved out from a terminal.

Estimating terminal throughput capacity is key to the process of selecting terminal sites and operating units.

Other considerations such as the threat, weather, and the availability of labor must also be taken into account.





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Terminal throughput capacity estimation is a very careful evaluation of five functional areas:

- Reception
- Discharge
- Transfer
- Storage
- Clearance

Threat, weather, labor, and other factors that are not functions of the estimating process must also be considered.

NOTE:

The least of the discharge, transfer, or clearance capacity is the terminal's throughput capacity.

All capacities must be estimated carefully considering all aspects of the situation even if the limiting capacity is obvious.

This makes it possible to determine where improvements can generate the greatest increase in throughput capacity.

Throughput Capacities



Reception

When planning for Reception, collect this data:

- Channel depth
- Channel width
- Length of berths
- Type of berths (such as quay, pier, and mole)
- Diameter of anchorages
- · Depth of water at berth
- · Type of terminal at berth

Discharge

When planning for Discharge, collect this data:

- · Discharge equipment on board
- Discharge equipment ashore
- · Width of apron
- · Special lift equipment
- · Number of discharge equipment needed

Transfer

When planning for Transfer, collect this data:

- Type of cargo
- · Type of cargo-handling equipment
- Round-trip distance
- · Number of cargo-handling equipment needed

Storage

When planning for Storage, collect this data:

- · Intrinsic capacity
- · Average dwell time
- Operating capacity
- Terminal facilities
- · Stacking methods
- Equipment used

Clearance

When planning for Clearance, collect this data:

- Clearance conveyance by mode
- Terminal equipment and personnel
- Gate capacity



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Reception Capacity

The Reception capacity is based on the number of ships (by type, length, and draft) that can be berthed in a harbor or at a terminal.

The two types of berths are:

- Fixed The best type of ship and an alternate for this berth depend on the type of terminal at the berth; for example, container, break-bulk, and RO/RO.
- Anchorage For military planning, ships anchor either offshore or in-the-stream (harbor). Other methods exist, but these two are used for military purposes so the ship can get underway quickly.

Factors that determine a terminal's reception capacity are the:

- · Number of berths or anchorages.
- · Terminal's physical and geographical features.
- Estimate of tonnage that can be handled.
- Wharf and anchorage size, water depth, and vessel traffic it can support.





FixedVessels require 75 to 100 linear feet of berth length in

addition to their measured LOA. Therefore, the longest vessel or combination of vessels must be 75 to 100 feet less than the length of the berth.

The minimum water depth alongside the berth at mean low tide determines the maximum allowable draft for vessels at that berth. A ship should always have at least 2 feet under its keel for safety of the vessel.

Use the following formulas to determine the required size (diameter) of an anchorage site for a ship:

Offshore: D = 2(7d + L)

In-the-stream: D = R(4d + 2L)

Where:

D = diameter

d = depth of water

L = length of ship

R = reserve factor (1.1)



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The Discharge capacity is the cumulative amount of cargo that can be discharged from each of the berths is-terminal discharge capacity.

This is an evaluation of discharge facilities and equipment found on the berths as well as on the type of ship to be docked on the berths.

It is expressed in short ton (STONs), container, measurement ton (MTONs), square feet, or numbers of personnel.

Capacity is based on the capability of discharge methods and equipment used. Historical reports, shipper's reports, and realistic evaluations help in the estimation. The shortage of personnel must also be considered.

Capacity Computations:

- · Breakbulk Berth
- Lighters Berth
- RO/RO Berth
- Underdeveloped Container Berth
- Developed Fixed Container Terminal

Discharge Capacity







Breakbulk Berth

With the berth operating on a 24-hour basis at 75 percent availability of Container handling equipment Container Handling Equipment (CHE), 2,500 STONs of breakbulk cargo can be discharged each day per berth.

Lighters Berth

Using one crane per lighter during discharge operations, the berth can discharge 300 STONs of break-bulk, 450 STONs of ammunition, or 200 containers per day.

RO/RO Berth

Loading and discharging areas for various classes of RO/RO vessels vary greatly. A RO/RO terminal should have 10 acres of open hard surface space with at least a 100-foot apron.

Since MSC vessels are loaded under conditions more likely to be encountered during a military contingency, their short-term rate of 600 MTONs or 3,898 square feet of cargo per hour is recommended for planning purposes.

Developed Fixed Container Terminal

When using container-handling cranes at a fully developed container facility, the simultaneous discharge and loading rate is between 700 and 800 containers per 24-hour period.

The rate of discharge at any container terminal depends on the type of container handling equipment (CHE), type of ship being worked, and the number of container cranes used. The number of cranes per terminal and berth often varies between terminals.

The size of the container does not affect the rate of discharge. If container-handling and transport equipment is available, all containers can be handled at the same rate.

The following barge rates apply:

- LASH The average ship discharge rate is one lighter every 15 minutes and one container every 3 minutes.
- SEABEE The average ship discharge rate is two barges every 25 minutes and one container every 3 minutes (if containers are carried in lieu of barges on the main deck).

Underdeveloped Container Berth

The discharge rate of 300 containers per day applies when off-loading or loading containers using U.S. Army heavy lift cranes working at anchor alongside a ship in an underdeveloped fixed port.

If back-loading is conducted at the same time as offloading, the back-loading rate equals about one-half of the discharge rates for offloading only. This berth should have at least a 100-foot apron.



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Transfer Capacity

Transfer Capacity is an evaluation of the capacity to move cargo from the discharge point to the storage point. It can be a time, equipment, and motion study that consider the number of moves available.

Transfer capacity is used twice (once for the lighterage and once with the material handling equipment (MHE) on the beach) when discharging ships at JLOTS sites or anchored in the stream.

For example, transfer capacity is the time it takes to move a pallet of cargo from the ship's side to the storage area, deposit it, and return to the ship's side.

The elements involved are:

- Average speed
- · Distance to be traveled
- Loading time
- · Unloading time
- Predictable delays
- · Terrain conditions affect speed
- · Variations in loads alter loading and unloading times

Average turnaround time is computed by using the following formula:

Turnaround time in hours = <u>land distance (round-trip)</u> + <u>land speed (mph)</u>

Loading Time in hrs + unloading time in hrs + delays in hrs land speed (mph)









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Storage Capacity

Storage capacity is the amount that can be stored at any one time. Storage capacity is given as an intrinsic capacity to obtain the operating capacity.

Intrinsic storage capacity is equal to the gross amount of containers, breakbulk, or square feet that can be replaced in intransit storage (100%). Optimum storage capacity is 55% of the gross or intrinsic capacity.

The operating capacity depends greatly on the average dwell time of the cargo. Some cargo space must be left empty so that space is available to move cargo.

Experience shows that congestion in the storage area begins at about 60 percent of the intrinsic capacity and is

complete at 80 percent of the intrinsic cargo capacity of the terminal.





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Clearance capacity is the ability, measured like discharge capacity except by mode, to clear cargo from the terminal.

The terminal clearance capacity may be limited by either of the following:

- Number of clearance conveyances
- Ability of terminal equipment and personnel to load clearance conveyances

The clearance capacity computations are based on:

- Rail clearance capacity
- · Highway clearance capacity
- · Inland waterway capacity

Clearance Capacity









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Key Points

The following key points were discussed:

- Throughput Evaluation
- Throughput Evaluation Planning Elements
- · Throughput Planning for JLOTS
- · Port Throughput Planning
- Throughput Capacities









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Quick Challenge



Which throughput capacity is determined by the number of ships that can be berthed in a harbor or at a terminal?

Select the best answer and then select Submit.

- A. Clearance capacity
- B. Discharge capacity



- C. Reception capacity
- D. Storage capacity
- E. Transfer Capacity



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Quick Challenge



When planning throughput evaluation, which of the following would you take into consideration?

Select all that apply and then select Submit.



- A. Determining the repair and rehabilitation of existing facilities
- B. Cast off and clear time from the beach



C. Estimating the units needed to operate the terminal



D. Determining the type or category of existing terminals



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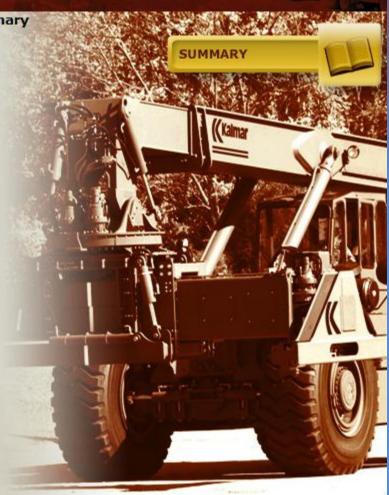
Summary

In this lesson, we have discussed:

- Movement Control Functions
- Movement Control Forms
- Transportation Control and Movement Document (TCMD)
- Automated TCMD
- Cargo Accountability and Flow Process
- Throughput Evaluation
- Throughput Evaluation Planning Elements
- Throughput Planning for JLOTS
- Port Throughput Planning
- Throughput Capacities

Remember that effective resource management requires the establishment and maintenance of a flow of resources and cargo through the transportation system that permits efficient utilization of all transportation resources and capabilities.

Maximum throughput at all transportation route segments, ports, and nodes, along with timely deliveries, are key measures of success in this effort as well as the success of the Combatant Commanders' missions that you will be supporting.



Good luck on the assessment!